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FLORIDA DEPARTMENT OF HEALTH

John O. Agwunobi, M.D., M.B.A.
Secretary

Date: July 20, 2004

To: Parwez Alam
County Administrator

Through: Arthur P. Cooper APC
Administrator

From: Alex Mahon
Environmental Manager

Subject: Killearn Water Quality Study

I am in receipt of "The Killearn Chain of Lakes Draft Report" dated June 23, 2004, and have reviewed the data. While we agree that there are concerns regarding the quality of the stormwater in Killearn Lakes Units One and Two subdivisions and resulting septic system failures, the data does not support the report's conclusions.

There is a long history of septic system problems in Killearn Lakes Unit One. The "Killearn Lakes Waste Water Disposal Study, June 1987", documented these problems and concluded that, "Sewage system installation would appear to be the only long term acceptable solution to the effluent disposal problems in Unit I", and "desirable in Unit II". This 1987 study also reported that, " Some relief of the duration and extent of failure may be obtained through the provision of a surface water management system". Water quality testing used to demonstrate the extent of contamination due to septic systems cannot rely on bacteriological data alone. Caffeine and the optical brighteners found in laundry detergents, are two tracers that are easily tested for, are not naturally found in the environment and would be clear evidence of contamination from failing septic system.

The health department believes that both a central sewer system and a surface water drainage system are the solution to the continuing problems that occur in this area, as density and high rainfall amounts continue to exacerbate the situation on a periodic basis. However, "The Killearn Chain of Lakes Draft Report" dated June 23, 2004, does not differentiate between the possible source of the pollution being the surface water runoff or failing septic systems. It does demonstrate the problem identified in 1987 to be a current one.

The "The Killearn Chain of Lakes Draft Report" dated June 23, 2004, compares the total coliform, E. Coli, fecal coliform and Enterococcus levels to Class III water standards for recreational waters. Class III waters are waters used for "recreation and the propagation and maintenance of a healthy well balanced population of fish and wildlife". The green areas, ditches and manmade lakes sampled in the study were developed as part of the "sheet-flow" stormwater management system for this subdivision. They were never intended to be Class III waters and as such, comparing them to the water quality standards of Class III water bodies is inappropriate and misleading. The sheet flow allowed for this surface water to drain to Lake Iamonia and it is not surprising to find degraded water quality as a result.

The impression the "The Killearn Chain of Lakes Draft Report" dated June 23, 2004 gives, is that the stormwater management system in the Killearn Chain of Lakes exceeds health standards. It includes as Appendix I, the Florida Department of Health Microbiological Guidelines for Fecal Coliform and

Enterococcus. These standards are for marine waters/beaches and cannot be applied to the current stormwater management facility in this subdivision.

Stormwater facilities are designed to accept untreated water from roads, ditches, residential property and other sources which carry with it contaminants including coliform bacteria.

- Coliform bacteria would be expected to be ubiquitous in drainage ditches.
- Enterococci and fecal coliform are indicators for warm-blooded animals and are not specific to humans.
- Chlorides, organic phosphorous and nitrogen were also presented as evidence of contamination from human waste. Human sewage is not the only source for these types of contamination.

"The Killearn Chain of Lakes Draft Report" dated June 23, 2004, includes results sampled only from those waters in the Killearn Lakes area. The data in this document would have more value if a control sampling were conducted for comparison in a similar neighborhood on central sewer. It would have been more appropriate to compare the results of the Killearn stormwater management facility to other similar stormwater facilities in the county that are not associated with septic systems. This would provide a more valid comparison than that which was done using Class III water and DOH beach standards. It would have been of more value if it had tested for caffeine and optical brighteners.

The health hazards associated with the pollutants found are similar to what we should expect to find in any surface drainage system from a densely populated urban area that does not retain and provide treatment for that surface water. You should not drink water from a drainage ditch nor the lake it flows into.

We believe that further study of this subdivision is not necessary. A sewer system would eliminate the septic problem but would do nothing to address the stormwater issues. The installation of a conventional stormwater management system may also help to reduce the rate of septic system failures in this subdivision.

If the goal is clean water for recreational use and health and safety, the health department recommends that both a sewer system and a stormwater system be considered as the solution.

If you have any questions regarding this matter please feel free to contact me at 487-3166.

cc: Joseph Sharp
Gary Johnson
John Kraynak
Theresa Heiker